

THREE NEW SPECIES OF INDIAN DRYNNID PARASITES OF RICE LEAF-HOPPERS.

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The following three new species of Drynnids were received for identification from the imperial entomologist of British India. One of them, *Digonatopus lucidus*, was reared from a nymph of the Jassid, rice leaf-hopper, *Nephotettix bipunctatus* Fabricius, while the other three were reared from the Fulgorid rice leaf-hoppers *Sogata pussana* Distant, *Sogata pallescens* Distant, or *Sogata distincta* Distant. In the case of the Fulgorid parasites the definite species of host was not recorded.

The types of all of the species are in the United States National Museum. The descriptions were prepared with the highest power of the Spencer binocular microscope.

DIGONATOPUS LUCIDUS, new species.

In *Das Tierreich* this species runs to *D. perpolitus* Perkins, but it differs from that species in a number of ways.

Female.—Length, 3 mm. Frons shining and with separate, irregular dorsad-ventrad wrinkles; frontal carina complete, distinct; vertex shining with a few granulations medianly; pronotum smooth shining; constricted part of thorax shining and with some irregular longitudinal wrinkles; propodeum shining and polished anteriorly, posteriorly with well-separated transverse wrinkles; abdomen smooth shining; body, except frons, and the legs with long sparse white hair; anterior leg and antennae as in figures 1 and 2. Black; face, narrow area above antennae and two basal joints of antennae yellowish; legs brownish, with the hind femora and coxae and the anterior femora black.

Type locality.—Pusa, Bihar, India. Described from one female reared, September 20, 1915, from a nymph of *Nephotettix bipunctatus* (Fabricius), by C. S. Misra.

Type.—Cat. No. 22384, U.S.N.M. One female on pin and left foreleg and antennae on Hym. slide 897.

HAPLOGONATOPUS ORIENTALIS, new species.

In the short fourth joint of the anterior tarsi this species differs from the genus *Haplogonatopus* as characterized by Kieffer and Perkins,

but it can not belong to *Cryptogonatopus* because of the concave vertex. It seems to agree well with genus otherwise and in color is allied to *H. americanus* Perkins.

Female.—Length, 2.5 mm. Frons subopaque, covered with fine reticulations, frontal line distinct; vertex coriaceous and opaque medianly, shining and almost without sculpture laterally; pronotum shining, very finely granular anteriorly; constricted part of thorax coarsely coriaceous anteriorly, posteriorly with a tendency to become transversely rugulose; anterior part of propodeum shining, almost smooth, the posterior and greater part transversely rugulose; abdomen smooth and shining; body without hair; antennae and forelegs as in figures 3, 4, 5, and 6. Thorax and legs rufo-testaceous; head and abdomen black; head below middle of front, cheeks, and basal antennal joints yellowish.

Paratypes show the fourth tarsal joint of anterior legs slightly longer and the anterior tarsal claws with only three teeth.

Male.—Length, 2. mm. A male bearing the same data as the type female agrees with the figure of the male illustrated in *Das Tierreich* (fig. 49, p. 89). Antennae 10-jointed, as long as the head and thorax, covered with hair, flagellar joints closely united; black, tegulae and legs pale brownish; two basal joints of antenna dark brown; wings hyaline; venation pale brown.

Type locality.—Janjgir, Bilaspur, India. Described from one female reared October 14, 1915, from *Sogata*, species on rice by C. S. Misra.

Paratype locality.—Bilaspur, India. Two females, reared October, 1915, from *Sogata*, species, on rice by C. S. Misra.

Type.—Cat. No. 22383, U.S.N.M. Tag mounted and left foreleg and right antenna on Hym. slide 900.* Paratypes tag mounted with a foreleg and antenna on Hym. slides 901 and 898.

PSEUDOGONATOPUS SOGATEA, new species.

Runs fairly satisfactorily to *P. antoxenobius* Perkins in *Das Tierreich* (p. 80) but differs from the original description of that species by being smaller, pronotum not more strongly sculptured than the head and the propodeum is not densely sculptured. If at couplet 3 the propodeum is said to be shining it would go to *nudus* Perkins. but it does not agree with the description of that species.

It is difficult to see the palpi, but I believe that I have seen them correctly; if the maxillary palpi are said to have two joints the species would go to *Paragonatopus*, where it differs in a more concave head. The description of the only species of *Paragonatopus*, however, agrees well with this species.

Female.—Length, 2.5 mm. Labial palpi two-jointed; maxillary palpi four-jointed, the basal joint small, the second somewhat shorter

than the third, the fourth slender style-like; frons shining, with a few setigeous punctures; a faint carina from between bases of antennae to anterior ocellus; ocelli in an acute triangle; vertex subcoriaceous; anterior part of pronotum coriaceous; mesonotum shining, with distinct separate punctures; constricted part of thorax coarsely coriaceous, the area immediately behind transversely rugulose; propodeum subopaque, finely punctured anteriorly, the posterior part transversely rugulose; abdomen, smooth, shining; antennae and anterior legs as in figures 7 and 8. Piceous; face, inner margins of eyes, head behind except at orbits, first three antennal joints yellowish or yellowish-brown; abdomen brownish; legs brownish, coxae paler, femora the darkest brown. Body without pubescence.

Male.—Length, 2 mm. Without much doubt a male, from same locality as the female, belongs here. It is impossible to see the palpi clearly, but the maxillary seem to have only two joints, and other than some specific characters does not seem to differ from male of *Haplogonatopus orientalis* Rohwer. Antennae 10-jointed, as long as head and thorax, rather sparsely clothed with hair, the flagellar joints well separated. Black; first two antennal joints, tegulae and legs testaceous; wings hyaline, venation pale brown.

Type locality.—Pusa, Bihar, India. Described from one female, reared August 6, 1915, and one male, reared August 4, 1915, from *Sogata*, species, by C. S. Misra.

Type.—Cat. No. 22382, U.S.N.M. Adult female on pin, the right foreleg and right antenna on Hym. slide 899. Male on pin.

EXPLANATION OF PLATE 22.

All drawings are to the same scale and were made by the author from slides by the use of a Leitz projection apparatus.

- Fig. 1.—*Digonatopus lucidus* Rohwer. Anterior leg of female from type.
 2.—*Digonatopus lucidus* Rohwer. Antenna from type female.
 3.—*Haplogonatopus orientalis* Rohwer. Antenna from type female.
 4.—*Haplogonatopus orientalis* Rohwer. Antenna from paratype female.
 5.—*Haplogonatopus orientalis* Rohwer. Anterior leg from type female.
 6.—*Haplogonatopus orientalis* Rohwer. Anterior tarsi from paratype female.
 7.—*Pseudogonatopus sogatae* Rohwer. Anterior leg from type female.
 8.—*Pseudogonatopus sogatae* Rohwer. Antenna from type female.